Claims:

1. A process for electrodepositing copper from an electrolyte solution containing the metal in ionogenic form, in which the electrolyte is passed through an electrolysis plant comprising at least one electrolytic cell which in an electrolyte tank for receiving the electrolyte has at least two electrodes serving as anode and cathode, which are alternately arranged at a distance from each other, **characterized in that** during operation of the electrolysis the at least one cathode is immersed into the electrolyte over a length of at least 1.2 meters.

2. The process as claimed in claim 1, **characterized in that** during operation of the electrolysis the at least one cathode is immersed into the electrolyte over a length of about 2 meters or another integral multiple of one meter.

3. The process as claimed in claim 1 or 2, **characterized in that** during operation of the electrolysis the at least one cathode is immersed into the electrolyte with a cross-sectional area of 2x1 meter.

4. The process as claimed in any of the preceding claims, **characterized in that** the at least one electrolytic cell has more than 60 cathodes, particularly preferably more than 100 cathodes, and quite particularly preferably 114 cathodes.

5. The process as claimed in any of the preceding claims, **characterized in that** the electrolysis is performed at a current density of more than 200 A/m², particularly preferably between 250 and 370 A/m².

6. The process as claimed in any of the preceding claims, **characterized in that** the electrodes have a horizontal hanger bar with a first end and a second end and at the edge of the electrolyte tank two contact bars are provided, witch each connected to a power source, the first end of the hanger bar of the cathodes resting on one of the two contact bars via a two-line contact and the first end of the hanger bar of the anodes resting on the other one of the two contact bars via a two-line contact.

7. The process as claimed in claim 6, **characterized in that** the contact bars each have an at least substantially trapezoidal indentation on which rest the respectively first ends of the hanger bars with a contact surface having an at least substantially rectangular cross-section.

8. The process as claimed in claim 6 or 7, **characterized in that** the hanger bar has a sheath surface made of steel and a core made of copper.

9. The process as claimed in any of claims 6 to 8, **characterized in that** the second end of the hanger bar of the cathodes rests on a cathode equalizer bar which is arranged on one of the two-contact bars.

10. The process as claimed in any of claims 6 to 9, **characterized in that** the second end of the hanger bar of the anodes rests on an anode equalizer bar, which is arranged on one of the two-contact bars.

11. The process as claimed in any of the preceding claims, **characterized in that** the contact bars and/or the equalizer bars or the intermediate contact bars are water-cooled.

12. The process as claimed in claim 11, **characterized in that** the bars to be cooled are cooled by passing cooling water through a cooling water channel provided in the-contact bars.

13. The process as claimed in claim 11 or 12, **characterized in that** the cooling water is passed through the cooling water channel in a turbulent flow.

14. The process as claimed in any of claims 11 to 13, **characterized in that** the contact bars to be cooled have two separate cooling circuits, one of which (primary circuit) is at least partly provided in the contact bars to be cooled, and which are both connected with each other by a heat exchanger.

15. The process as claimed in claim 14, **characterized in that** the primary circuit is fed with purified water and the second cooling circuit (secondary circuit) is fed with crude water.

16. The process as claimed in any of the preceding claims, **characterized in that** in the at least one electrolytic cell a fluid distributor is provided, through which during operation of the electrolysis electrolyte solution, gas bubbles or a mixture of electrolyte solution and gas bubbles are introduced into the electrolytic cell.

17. The process as claimed in claim 16, **characterized in that** the fluid distributor is disposed at the lower end of the electrolytic cell and that the fluid is introduced into the electrolytic cell through the distributor below or at about the level of the lower end of the electrodes.

18. The process as claimed in claim 16 or 17, **characterized in that** the fluid distributor consists of two tubes arranged substantially parallel to the longitudinal sides of the electrolytic cell, which at their surface each have one or more fluid outlet holes and whose first ends are each connected with a fluid supply conduit.

19. The process as claimed in any of claims 16 to 18, **characterized in that** the fluid distributor has about 1 to 5, particularly preferably about 1-2 fluid outlet holes per electrode pair and cell side provided in the electrolytic cell, whose arrangement is substantially adjusted to the spaces between the electrodes.

20. The process as claimed in any of claims 16 to 19, **characterized in that** the fluid outlet holes of the fluid distributor are of substantially circular shape and have a diameter of 1 to 10 mm, particularly preferably of 5 to 7 mm, and quite particularly preferably of about 6 mm.

21. The process as claimed in any of the preceding claims, **characterized in that** each electrolytic cell has two electrolyte outlets.

22. The process as claimed in any of the preceding claims, **characterized in that** the cathodes have an indentation of V-shaped cross-section at their lower longitudinal edge.

23. An electrolysis plant for electrodepositing copper from an electrolyte solution containing the metal in ionogenic form, in particular for performing a process as claimed in any of claims 1 to 22, comprising at least one electrolytic cell (1) which includes an electrolyte tank for receiving the electrolyte, at least two electrodes serving as anode (2) and cathode (3), which are alternately arranged at a distance from each other and each have a substantially horizontal hanger bar (4), as well as two contact bars (10) arranged at the edge of the electrolyte tank, which each have a contact bar connectable to a power source, where the at least one cathode (3) has a first end of its hanger bar (4) rest on one of the two contact bars and the at least one anode (2) has a first end of its hanger bar (4) rest on the other one of the two-contact bars, **characterized in that** the first ends of the hanger bars (4) each rest on the contact bars via a two-line contact (9), and that on at least one of the two contact bars (10) at least one equalizer bar (11) is provided, on which rests a second end of the hanger bars (4) of the cathodes (3) and/or anodes (2).

24. The electrolysis plant as claimed in claim 23, **characterized in that** on each of the two contact bars (10) at least one equalizer bar (11) is provided, the respectively second end of the hanger bars (4) of the cathodes (3) resting on one of the two equalizer bars (11) and the respectively second end of the hanger bars (4) of the anodes (2) resting on the other equalizer bar (11).

25. The electrolysis plant as claimed in claim 23 or 24, **characterized in that** the contact bars each have a substantially trapezoidal indentation, on which rest the respectively first ends of the hanger bars (4) of the electrodes with a contact surface having a substantially rectangular cross-section.

26. The electrolysis plant as claimed in any of claims 23 to 25, **characterized in that** at least in one of the contact bars, the equalizer bars and/or the intermediate rails a cooling water channel is provided.

27. The electrolysis plant as claimed in claim 26, **characterized in that** the cooling water channel has a diameter of 15 to 20 mm.

28. The electrolysis plant as claimed in claim 26 or 27, **characterized in that** for supplying water the conductor bars having a cooling water channel is connected with a tube made of PVC or a hose made of vinyl material.

29. The electrolysis plant as claimed in any of claims 26 to 28, **characterized by** two separate cooling circuits, one of which (primary circuit) is at least partly provided in one of the conductor bars to be cooled, both cooling circuits being connected with each other by a heat exchanger.

30. The electrolysis plant as claimed in claim 29, **characterized in that** the primary circuit comprises a water expansion tank.

31. The electrolysis plant as claimed in any of the preceding claims, **characterized in that** inside the electrolytic cell, particularly preferably at the bottom inside the electrolytic cell, a fluid distributor is provided.

32. The electrolysis plant as claimed in claim 31, **characterized in that** the fluid distributor consists of two tubes arranged substantially parallel to the longitudinal sides of the electrolytic cell, which at their surfaces each have one or more fluid outlet holes and whose first ends are each connected with a fluid supply conduit.

33. The electrolysis plant as claimed in claim 31 or 32, **characterized in that** the fluid distributor has about 1 to 5, particularly preferably about 1-2 fluid outlet holes per electrode pair provided in the electrolytic cell, whose arrangement is substantially adjusted to the spaces between the electrodes, which particularly preferably have a circular shape and a diameter of 1 to 10 mm, particularly preferably 5 to 7 mm, and in particular about 6 mm.